

Weekly Report

祝陈老师教师节快乐!

September 10, 2017

1 Work

- 本周已基本完成对location2vec的修改，论文已经交给鲁老师进行修正，大约一周时间完成。

1.1 工作进度

Table 1: 工作进度

任务	当前进度	截止时间
location2vec修改	已基本完成location2vec的修改，论文已经交给鲁老师进行修正。	8月30日
投影	正在进行对高维投影方法的讨论。	9月30日
*2Vec综述	本周对目前收集的文章进行分类归纳，下周可以扩大一下文章的方法类型。	10月30日
专利	已经联系过律师，会尽快完成。	

1.2 2Vec综述

Table 2: 综述

数据类型	文章名
Text	<ol style="list-style-type: none"> 1. Distributed Representations of Words and Phrases and their Compositionality (word2vec) 2. Distributed representations of sentences and documents (doc2vec) 3. Novel2Vec: Characterising 19th Century Fiction via Word Embeddings 4. cite2vec: Citation-Driven Document Exploration via Word Embeddings 5. Discovery of Evolving Semantics through Dynamic Word Embedding Learning 6. Mixing Dirichlet Topic Models and Word Embeddings to Make lda2vec 7. sense2vec - a fast and accurate method for word sense disambiguation in neural word embeddings 8. emoji2vec: Learning Emoji Representations from their Description
Network	<ol style="list-style-type: none"> 1. DeepWalk: Online Learning of Social Representations 2. node2vec: Scalable Feature Learning for Networks 3. struc2vec: Learning Node Representations from Structural Identity 4. struc2vec: Learning Node Representations from Structural Identity
Trajectory	<ol style="list-style-type: none"> 1. Exploring the Context of Locations for Personalized Location Recommendations 2. POI2Vec: Geographical Latent Representation for Predicting Future Visitors 3. A General Multi-Context Embedding Model for Mining Human Trajectory Data 4. From Word Embeddings to Item Recommendation 5. A Data Grouping CNN Algorithm for Short-Term Traffic Flow Forecasting
Video	<ol style="list-style-type: none"> 1. Video2Vec: Learning Semantic Spatial-Temporal Embeddings for Video Representation 2. Learning Temporal Embeddings for Complex Video Analysis
Item	<ol style="list-style-type: none"> 1. item2vec: neural item embedding for collaborative filtering

2 Paper Reading

2.1 UrbanFACET: Visually Profiling Cities from Mobile Device Recorded Movement Data of Millions of City Residents

文章中利用精确的GPS记录数据，对每个记录点计算了各种属性值（主要包括信息熵），然后利用网格的方法对数据点进行聚合，提高对大尺度数据的实时处理效率。

2.2 EventThread: Visual Summarization and Stage Analysis of Event Sequence Data

使用张量分解的方式从时序数据中提取主题并进行分析，



Figure 1: EventThread

2.3 What Would a Graph Look Like in This Layout? A Machine Learning Approach to Large Graph Visualization

文章对于网络的抽取了一些局部特征的统计数值作为一个graph的特征向量，然后利用回归模型预测图之间的相似程度，从而达到预测图布局的目的。

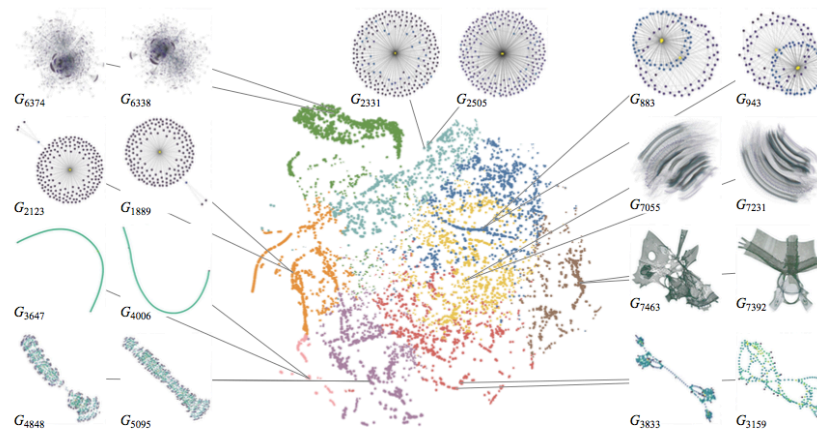


Figure 2: GraphLayout

2.4 TACO: Visualizing Changes in Tables Over Time

文章设计了一些列比较两个表格的可视化方法，包括2D ratio chart展示行列变化的比例，以及具体的热力图展示每个cell变化的情况。

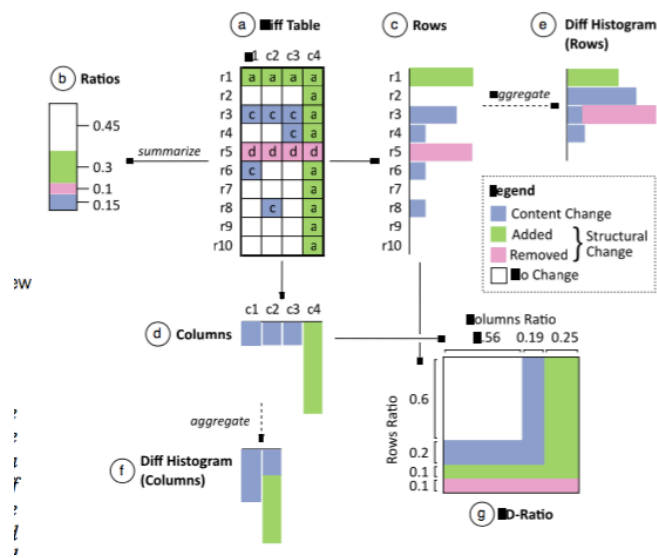


Figure 3: TACO